#4

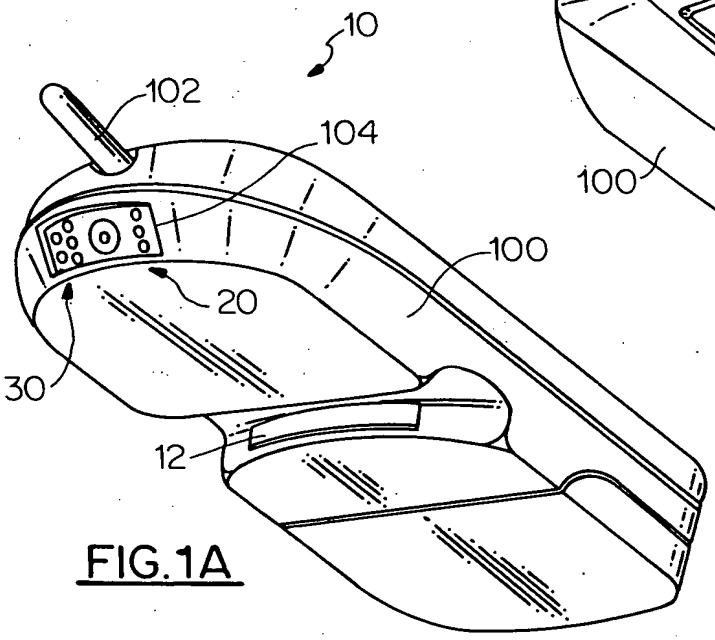

FIG.1A

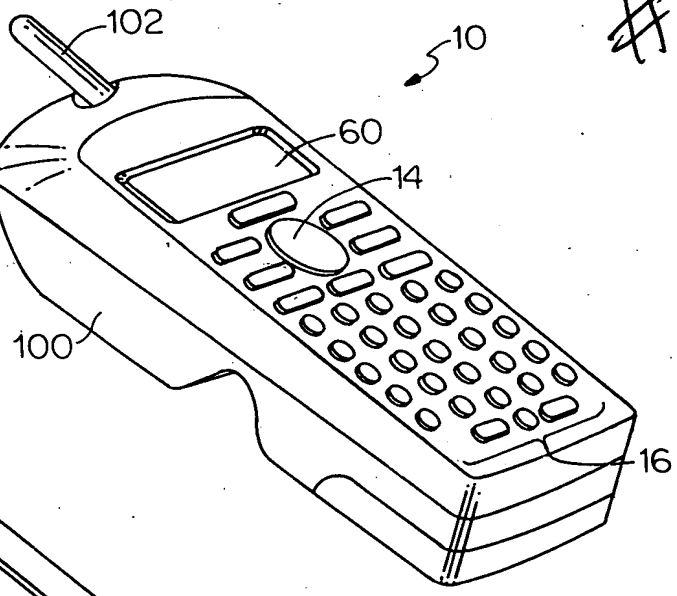

FIG.1B

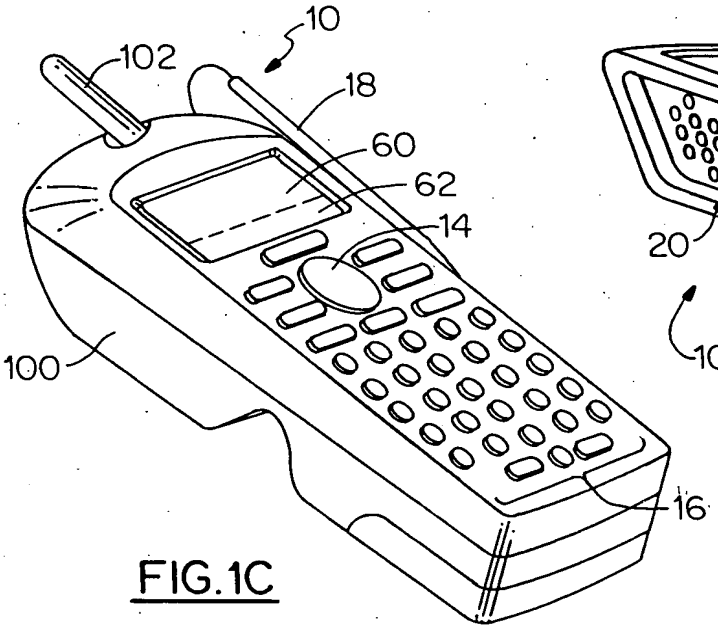

FIG.1C

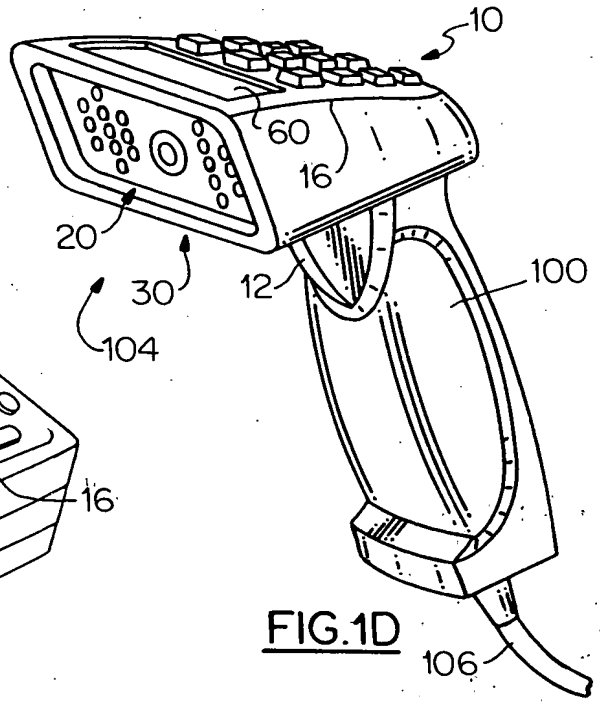

FIG.1D

T0500T "269h660

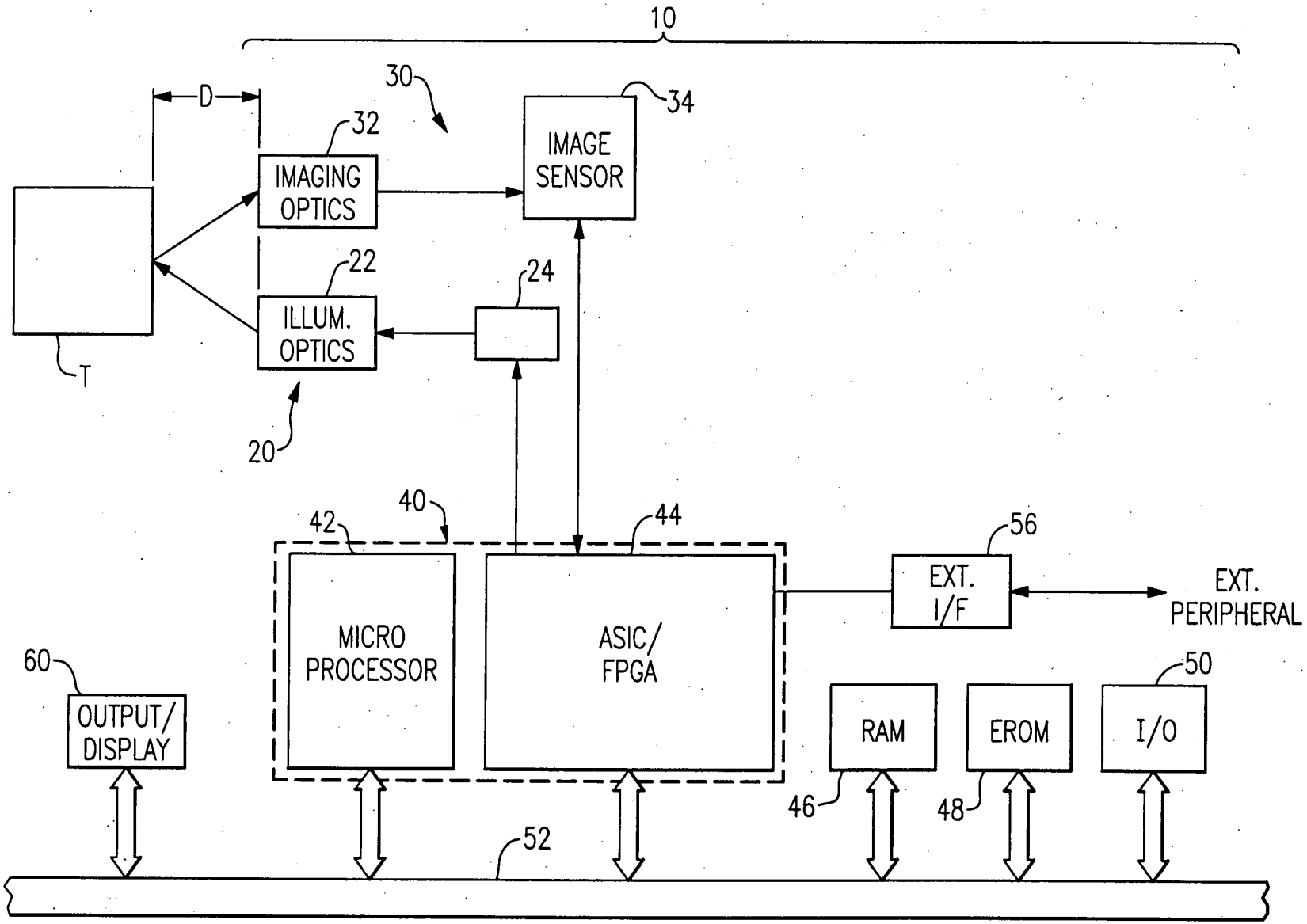

FIG.2

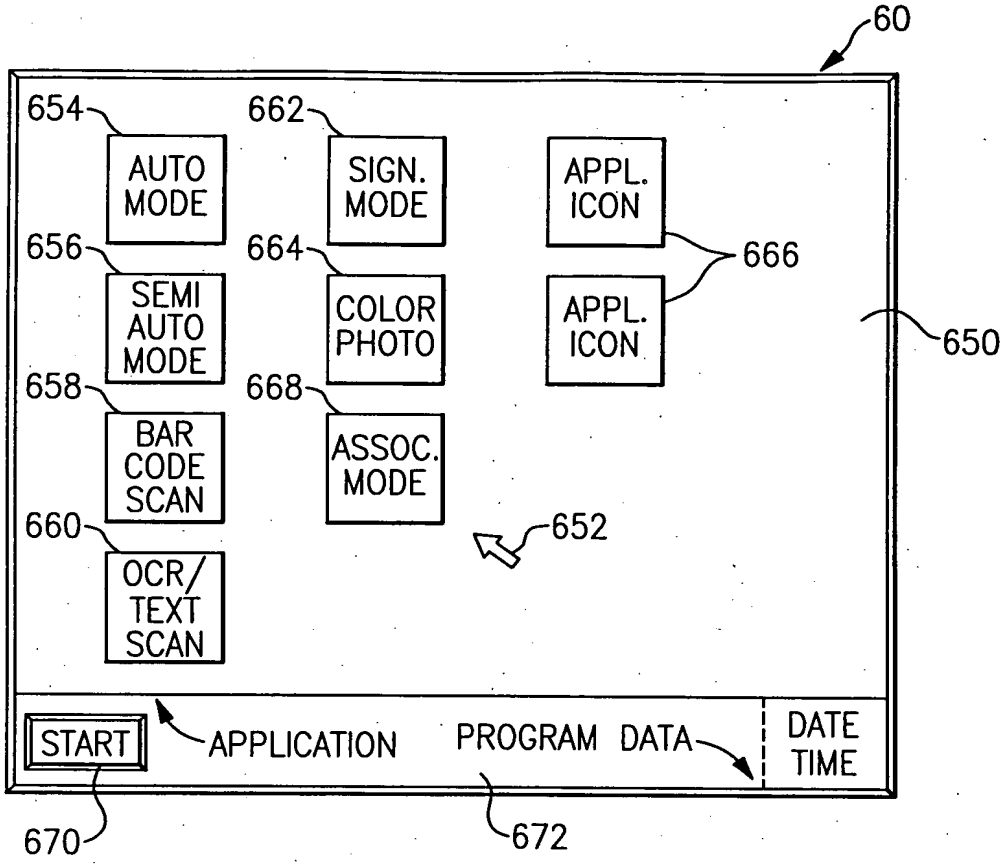
60
654
AUTO MODE
662
SIGN. MODE
APPL. ICON
666
656
SEMI AUTO MODE
664
COLOR PHOTO
APPL. ICON
650
658
BAR CODE SCAN
668
ASSOC. MODE
652
660
OCR/ TEXT SCAN
START
APPLICATION
PROGRAM DATA
DATE TIME
670
672

FIG.3

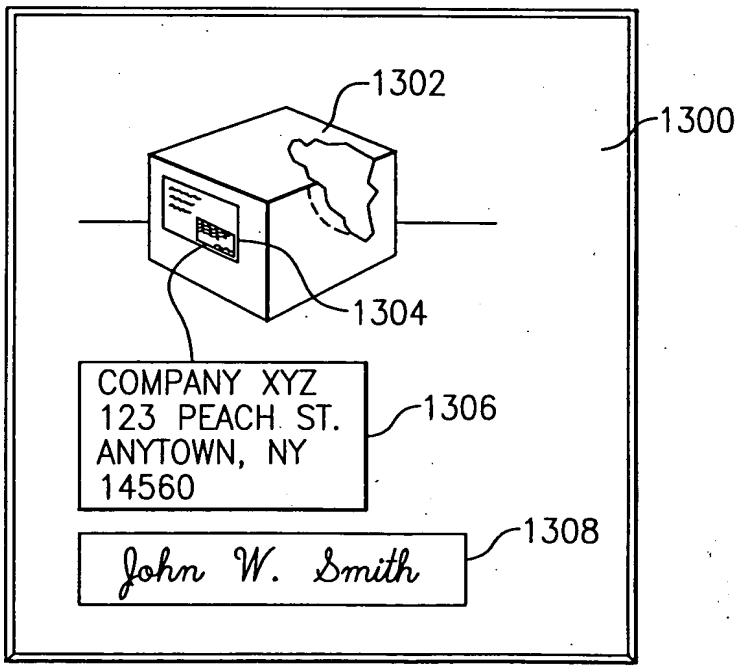
1302
1300
1304
COMPANY XYZ
123 PEACH ST.
ANYTOWN, NY
14560
1306
John W. Smith
1308

FIG.13

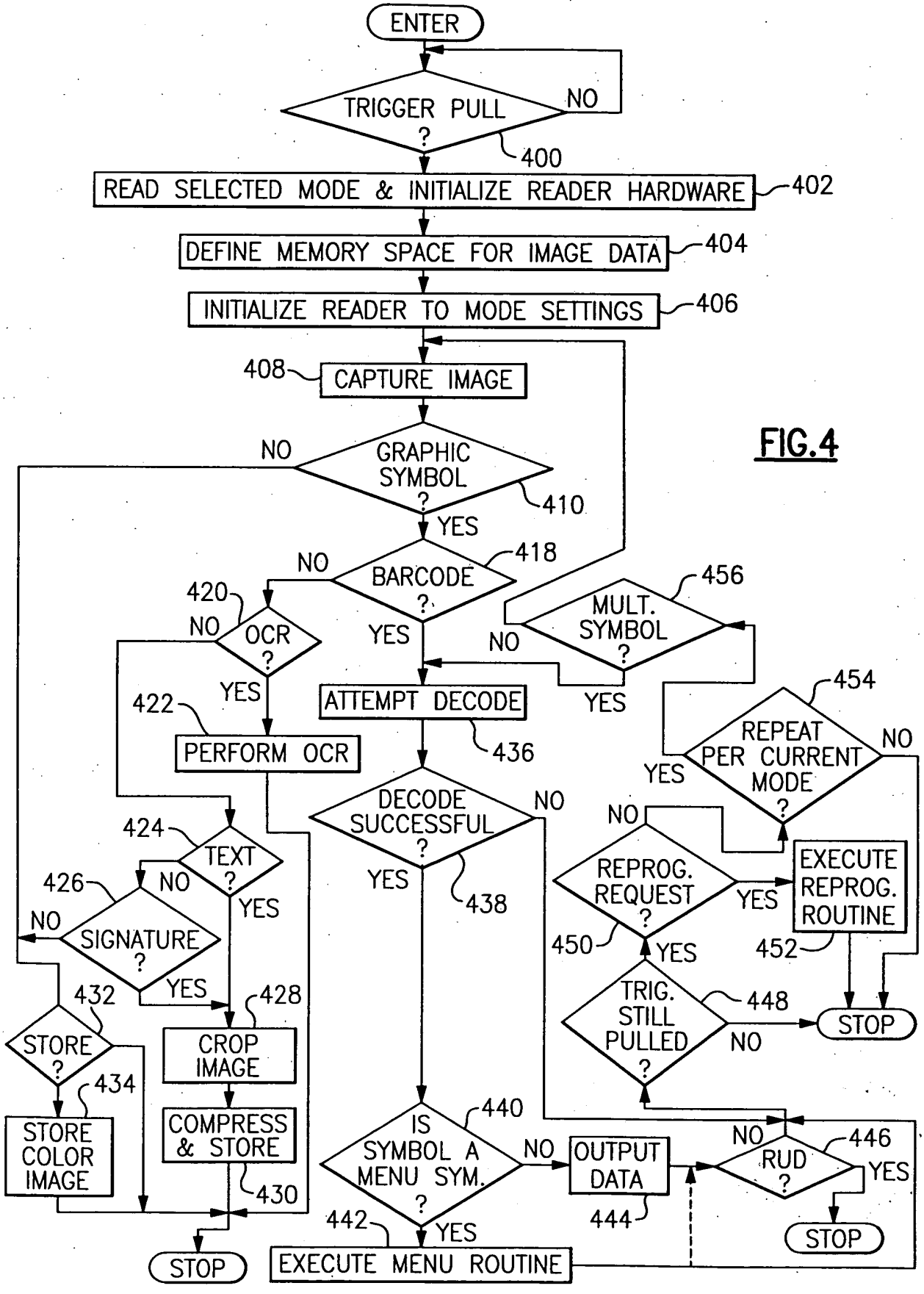
ENTER
TRIGGER PULL ?
NO
400
READ SELECTED MODE & INITIALIZE READER HARDWARE
402
DEFINE MEMORY SPACE FOR IMAGE DATA
404
INITIALIZE READER TO MODE SETTINGS
406
408
CAPTURE IMAGE
GRAPHIC SYMBOL ?
NO
410
YES
BARCODE ?
NO
418
YES
420
OCR ?
NO
YES
422
PERFORM OCR
ATTEMPT DECODE
436
MULT. SYMBOL ?
456
NO
YES
454
REPEAT PER CURRENT MODE ?
NO
YES
DECODE SUCCESSFUL ?
NO
YES
438
424
TEXT ?
NO
YES
426
SIGNATURE ?
NO
YES
REPROG. REQUEST ?
NO
YES
450
EXECUTE REPROG. ROUTINE
452
TRIG. STILL PULLED ?
448
NO
STOP
432
STORE ?
428
CROP IMAGE
434
STORE COLOR IMAGE
COMPRESS & STORE
430
STOP
440
IS SYMBOL A MENU SYM. ?
NO
OUTPUT DATA
444
442
YES
EXECUTE MENU ROUTINE
NO
RUD ?
446
YES
STOP

FIG.4

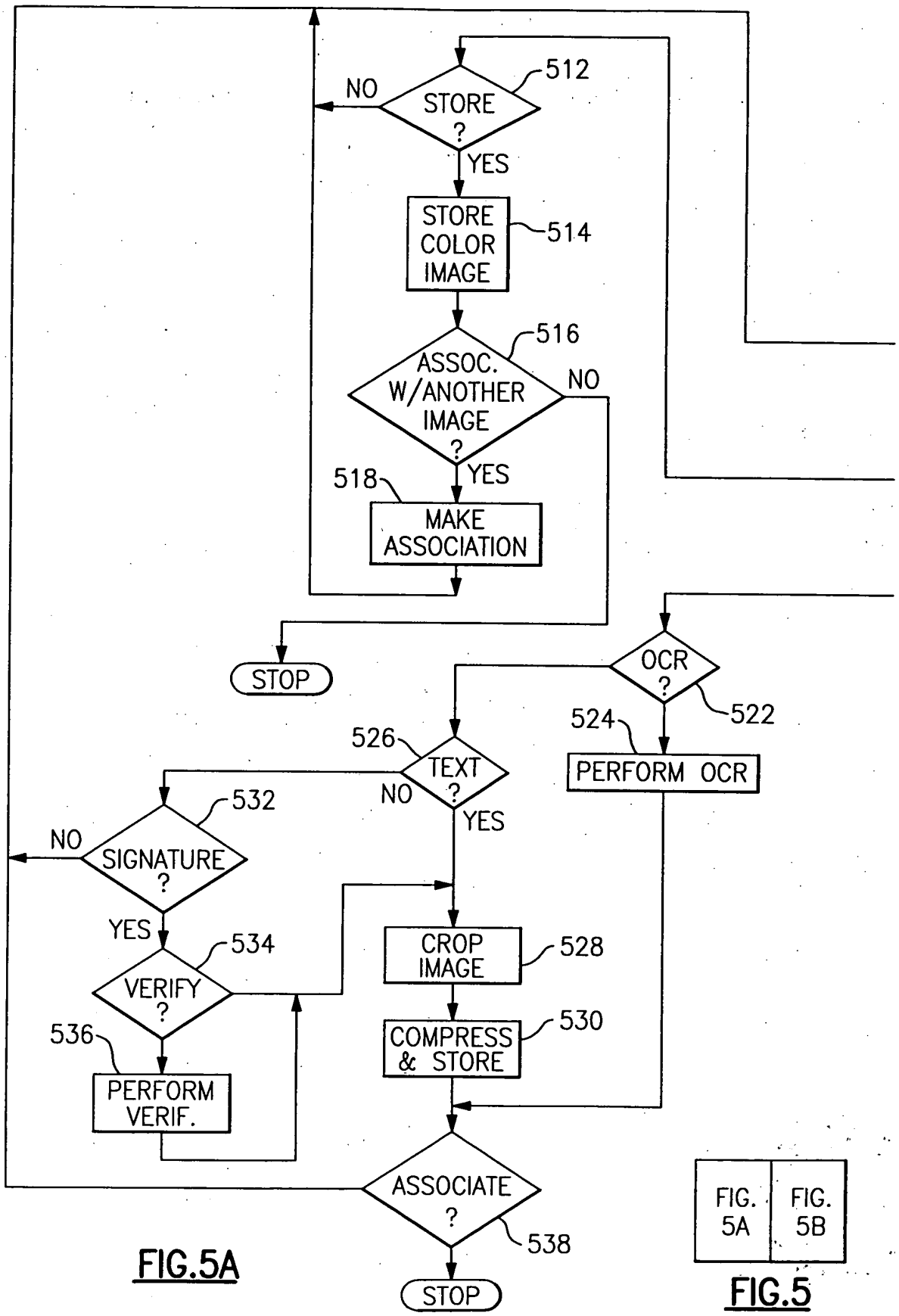

FIG.5A

FIG. 5A	FIG. 5B

FIG.5

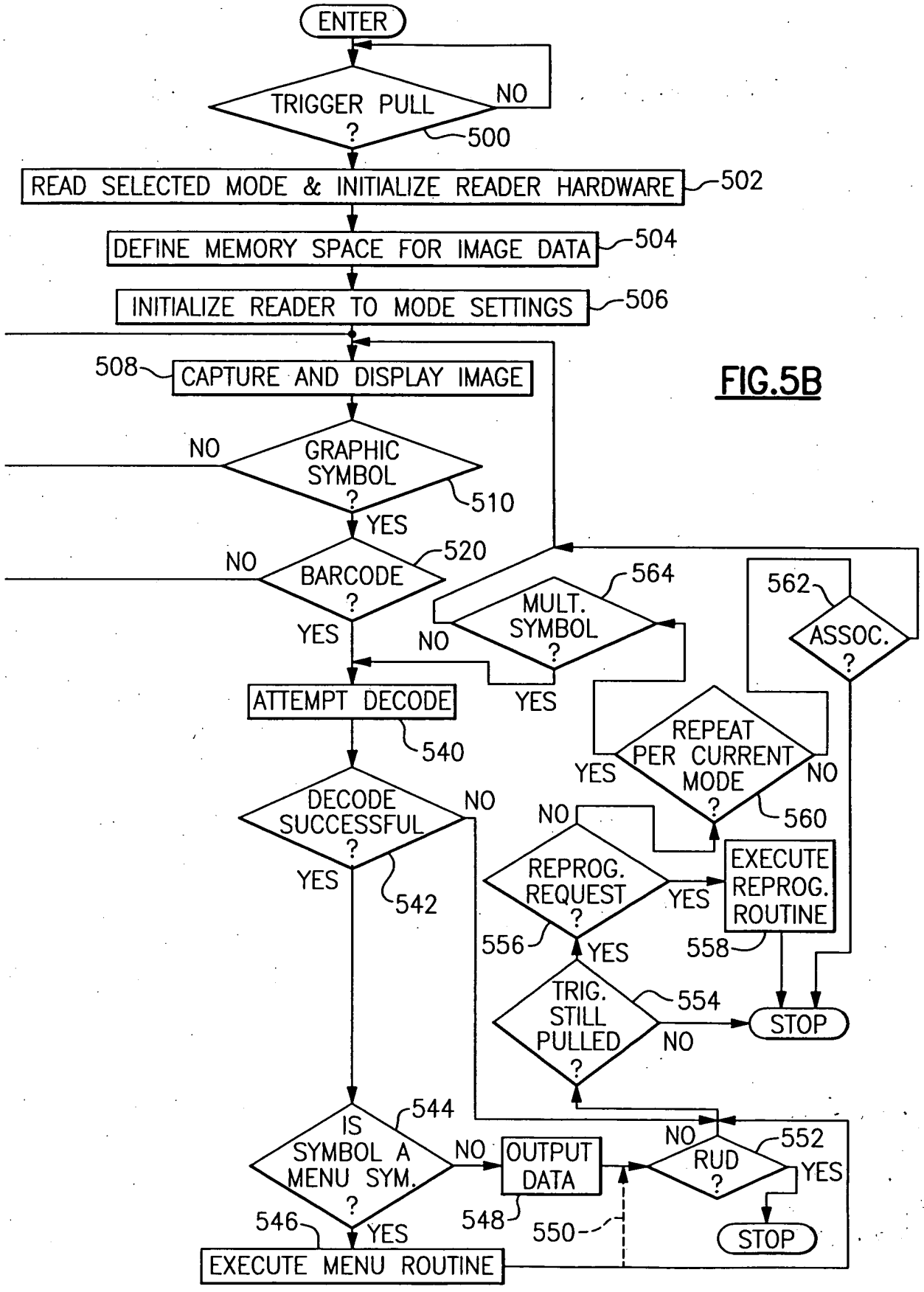
ENTER
TRIGGER PULL ?
NO
500
READ SELECTED MODE & INITIALIZE READER HARDWARE
502
DEFINE MEMORY SPACE FOR IMAGE DATA
504
INITIALIZE READER TO MODE SETTINGS
506
508
CAPTURE AND DISPLAY IMAGE
GRAPHIC SYMBOL ?
NO
510
YES
BARCODE ?
520
NO
YES
MULT. SYMBOL ?
564
NO
YES
ASSOC. ?
562
ATTEMPT DECODE
540
REPEAT PER CURRENT MODE ?
YES
NO
560
DECODE SUCCESSFUL ?
NO
YES
542
REPROG. REQUEST ?
NO
YES
556
EXECUTE REPROG. ROUTINE
558
TRIG. STILL PULLED ?
YES
554
NO
STOP
IS SYMBOL A MENU SYM. ?
544
NO
YES
546
OUTPUT DATA
548
RUD ?
NO
552
YES
550
STOP
EXECUTE MENU ROUTINE

FIG.5B

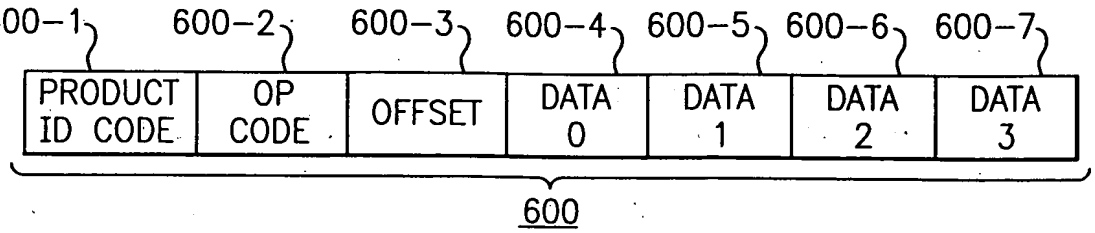

FIG.6A

OPTIONS (OFFSET) TABLE

A. COMMUNICATIONS OPTIONS
   1. RS-232
   2. BAUD RATE
   3. RF LINK
   4. ETHERNET

B. CODE OPTIONS
   1. DISABLE 1D
   2. DISABLE 2D
   3. DISABLE INDIV.
   4. MIN-MAX LENGTH
   5. MULTIPLE SYMBOLS ENABLED

C. SCANNING-DECODING OPTIONS
   1. ONE SHOT
   2. REPEAT UNTIL DONE
   3. REPEAT UNTIL STOPPED
   4. SCAN ON DEMAND
   5. SKIP SCAN
   6. DECODE ON DEMAND

D. OPERATING OPTIONS
   1. BEEPER VOLUME
   2. AIMING LED ON/OFF
   3. AURAL FEEDBACK

E. TRANSMIT OPTIONS
   1. SEND CHECK CHAR'S
   2. SEND CHECKSUM
   3. DATA EDIT OPTIONS

F. READER MODE OPTIONS
   1. AUTOMATIC
   2. SEMI-AUTOMATIC
   3. BAR CODE SCANNING
   4. OCR
   5. SIGNATURE
   6. COLOR IMAGING

FIG.6B

OP CODE TABLE

A. OP CODE "0"-VECTOR PROC.
   1. OUTPUT VERSION OF SOFTWARE
   2. OUTPUT CONTENTS OF PARAMETER TABLE
   3. DISPLAY ENABLED CODES
   4. PRINT PARAMETER TABLE AS BAR CODE SYMBOL

B. OP CODE "1" - CLEAR
C. OP CODE "2" - SET
D. OP CODE "3" - TOGGLE
E. OP CODE "4" - ADD
F. OP CODE "5" - DEFAULT
G. OP CODE "6" - LOAD
H. OP CODE "7" - RESERVED

FIG.6C

US 6,565,004 B2

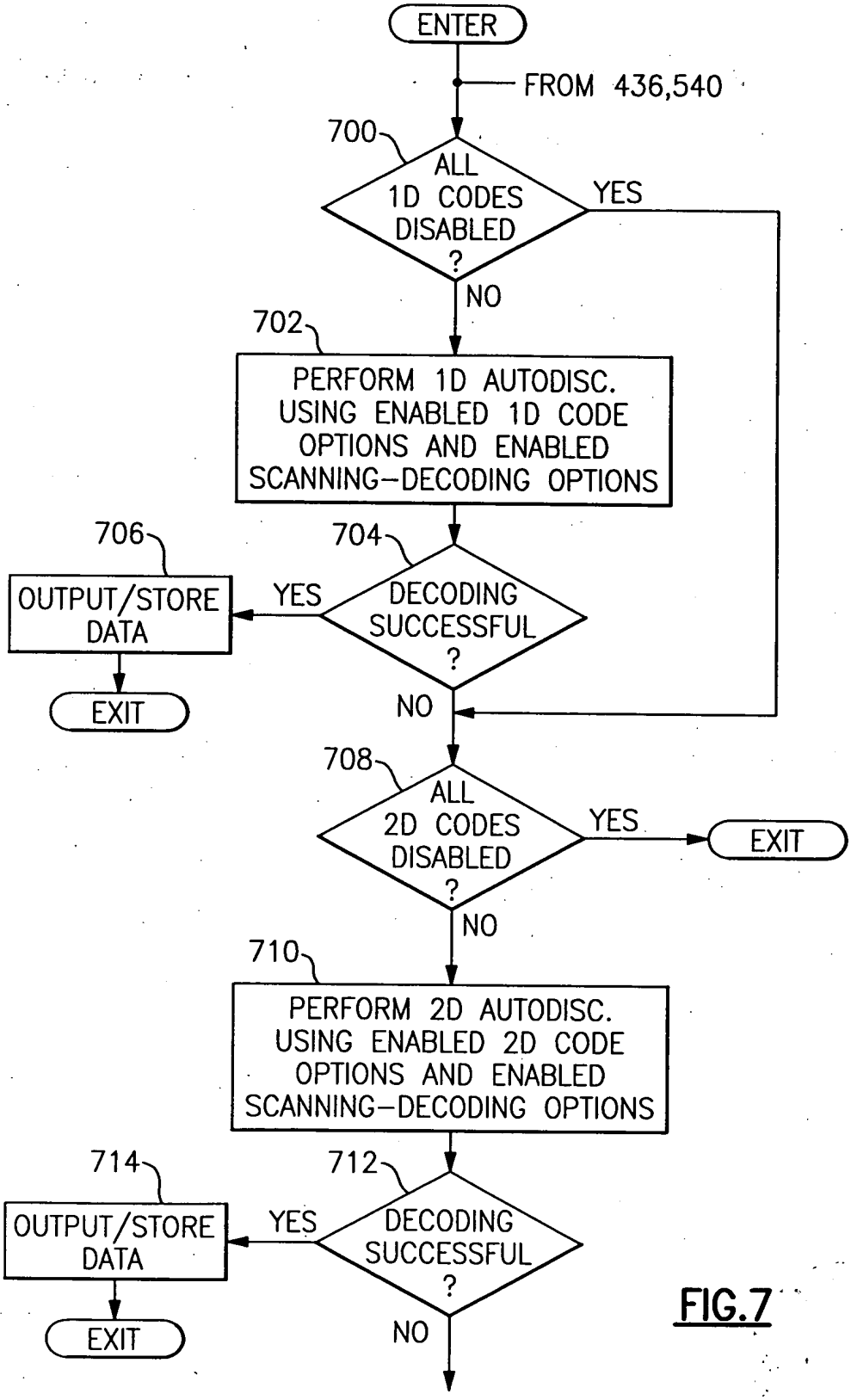

FIG.7

09504607 .060504

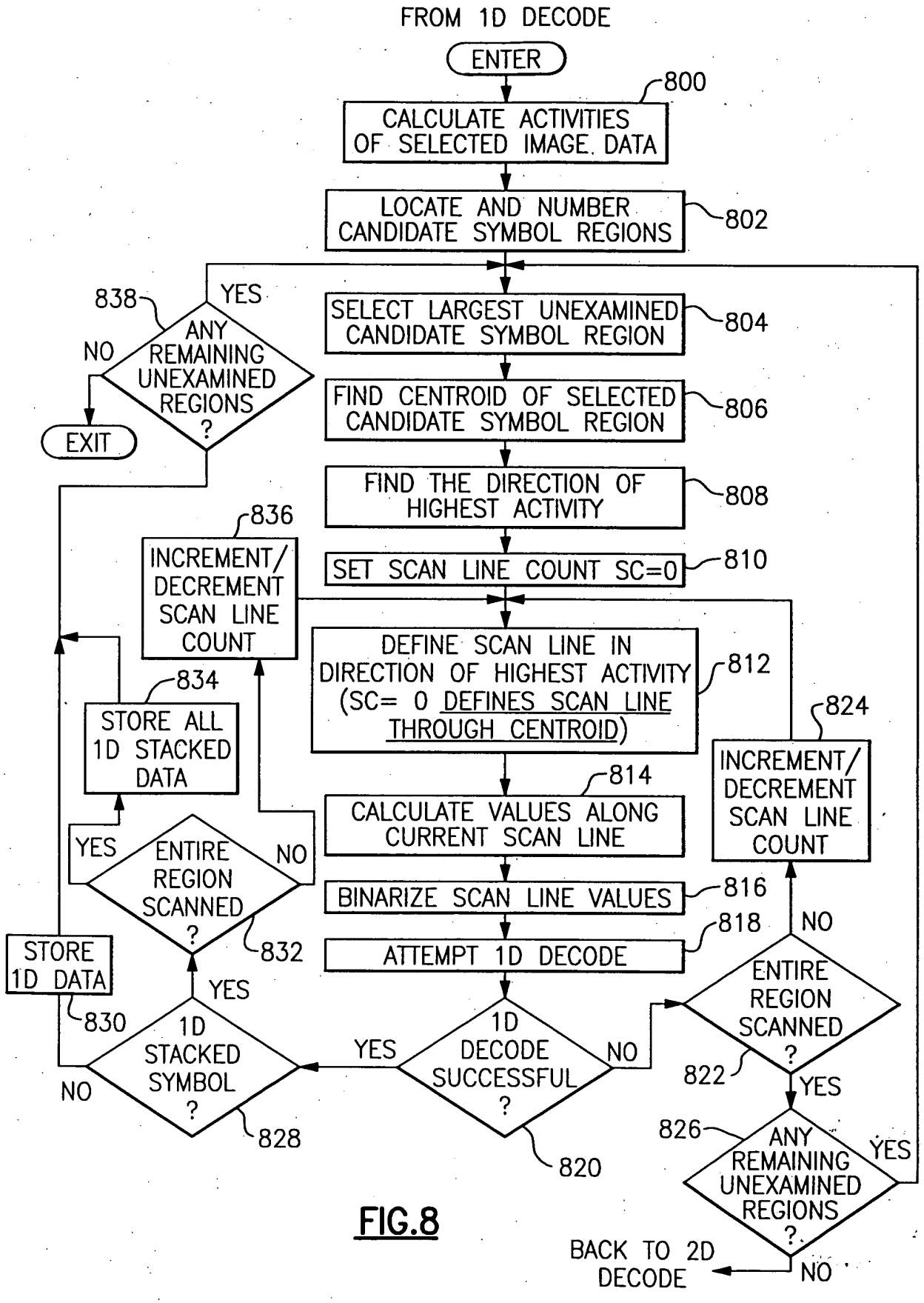
FROM 1D DECODE
ENTER
800
CALCULATE ACTIVITIES OF SELECTED IMAGE DATA
LOCATE AND NUMBER CANDIDATE SYMBOL REGIONS
802
SELECT LARGEST UNEXAMINED CANDIDATE SYMBOL REGION
804
FIND CENTROID OF SELECTED CANDIDATE SYMBOL REGION
806
FIND THE DIRECTION OF HIGHEST ACTIVITY
808
SET SCAN LINE COUNT SC=0
810
DEFINE SCAN LINE IN DIRECTION OF HIGHEST ACTIVITY (SC= 0 DEFINES SCAN LINE THROUGH CENTROID)
812
CALCULATE VALUES ALONG CURRENT SCAN LINE
814
BINARIZE SCAN LINE VALUES
816
ATTEMPT 1D DECODE
818
1D DECODE SUCCESSFUL ?
YES
NO
820
1D STACKED SYMBOL ?
YES
NO
828
STORE 1D DATA
830
ENTIRE REGION SCANNED ?
YES
NO
832
STORE ALL 1D STACKED DATA
834
INCREMENT/ DECREMENT SCAN LINE COUNT
836
ENTIRE REGION SCANNED ?
YES
NO
822
INCREMENT/ DECREMENT SCAN LINE COUNT
824
ANY REMAINING UNEXAMINED REGIONS ?
YES
NO
826
ANY REMAINING UNEXAMINED REGIONS ?
YES
NO
838
EXIT
BACK TO 2D DECODE

FIG.8

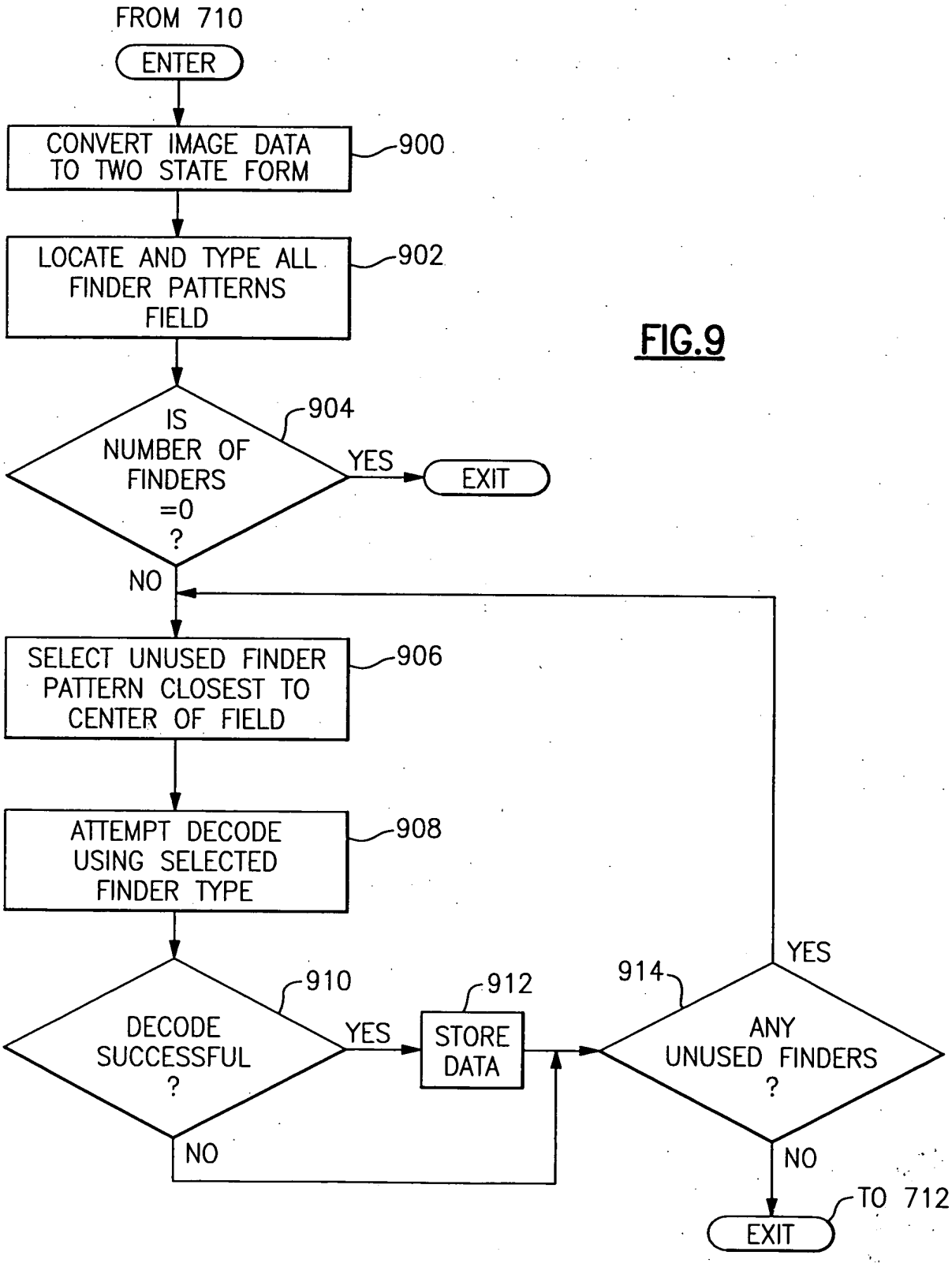

FIG.9

Petitioner's Exhibit 1006
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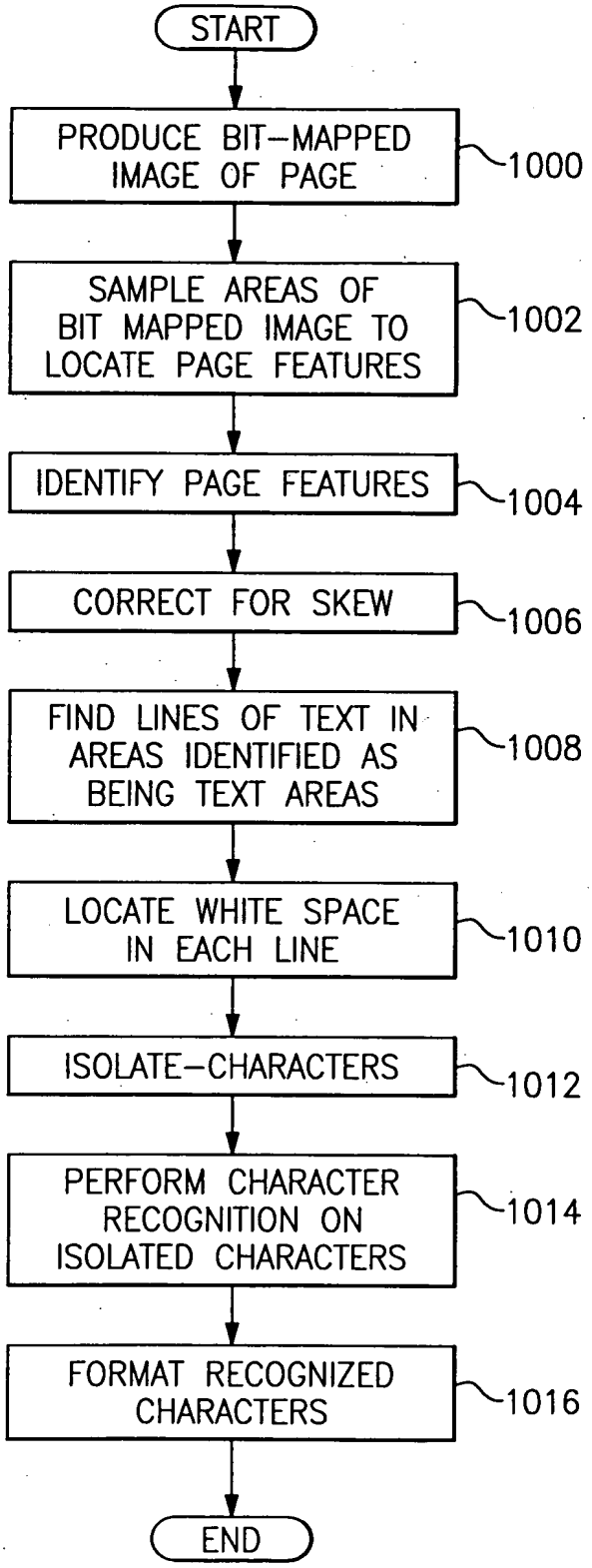
START
PRODUCE BIT-MAPPED IMAGE OF PAGE
1000
SAMPLE AREAS OF BIT MAPPED IMAGE TO LOCATE PAGE FEATURES
1002
IDENTIFY PAGE FEATURES
1004
CORRECT FOR SKEW
1006
FIND LINES OF TEXT IN AREAS IDENTIFIED AS BEING TEXT AREAS
1008
LOCATE WHITE SPACE IN EACH LINE
1010
ISOLATE-CHARACTERS
1012
PERFORM CHARACTER RECOGNITION ON ISOLATED CHARACTERS
1014
FORMAT RECOGNIZED CHARACTERS
1016
END

FIG.10

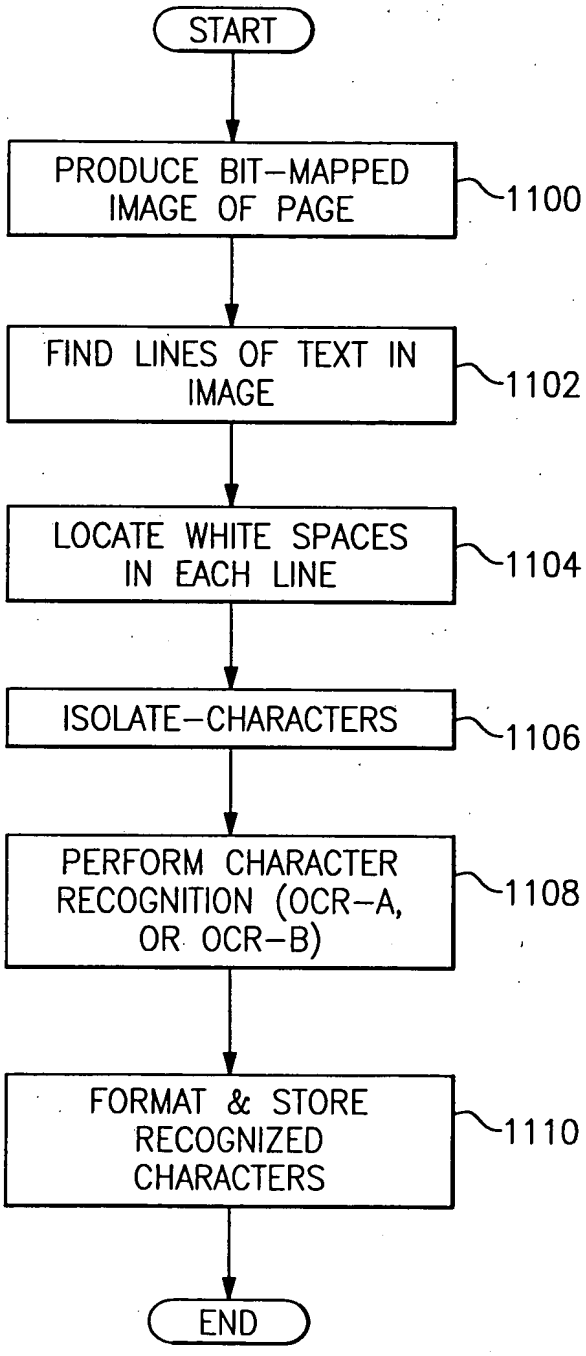
START
PRODUCE BIT-MAPPED IMAGE OF PAGE
1100
FIND LINES OF TEXT IN IMAGE
1102
LOCATE WHITE SPACES IN EACH LINE
1104
ISOLATE-CHARACTERS
1106
PERFORM CHARACTER RECOGNITION (OCR-A, OR OCR-B)
1108
FORMAT & STORE RECOGNIZED CHARACTERS
1110
END

FIG.11

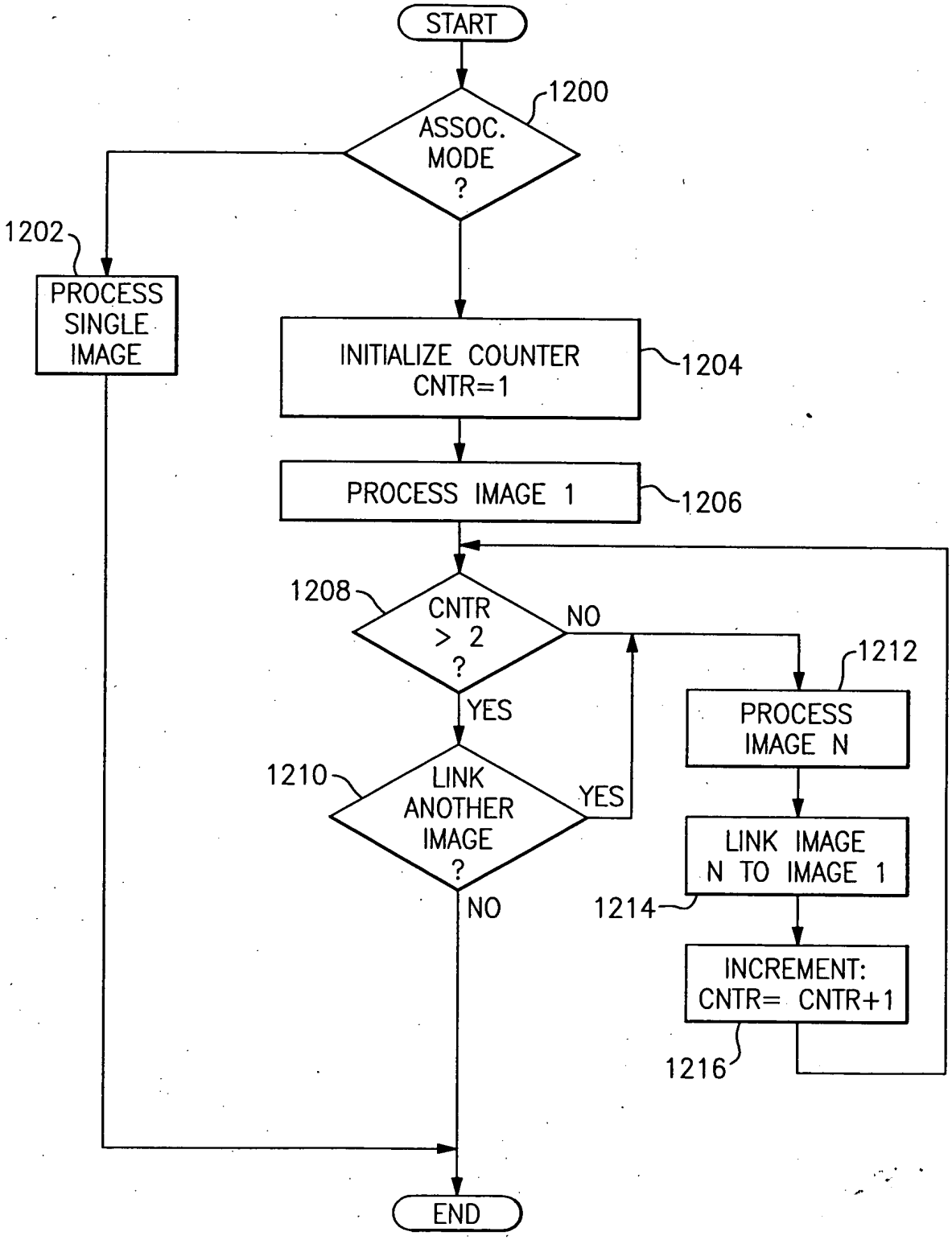
START
1200
ASSOC. MODE ?
1202
PROCESS SINGLE IMAGE
INITIALIZE COUNTER CNTR=1
1204
PROCESS IMAGE 1
1206
1208
CNTR > 2 ?
NO
YES
1212
PROCESS IMAGE N
1210
LINK ANOTHER IMAGE ?
YES
NO
LINK IMAGE N TO IMAGE 1
1214
INCREMENT: CNTR= CNTR+1
1216
END

FIG.12

T0900T" 269h066

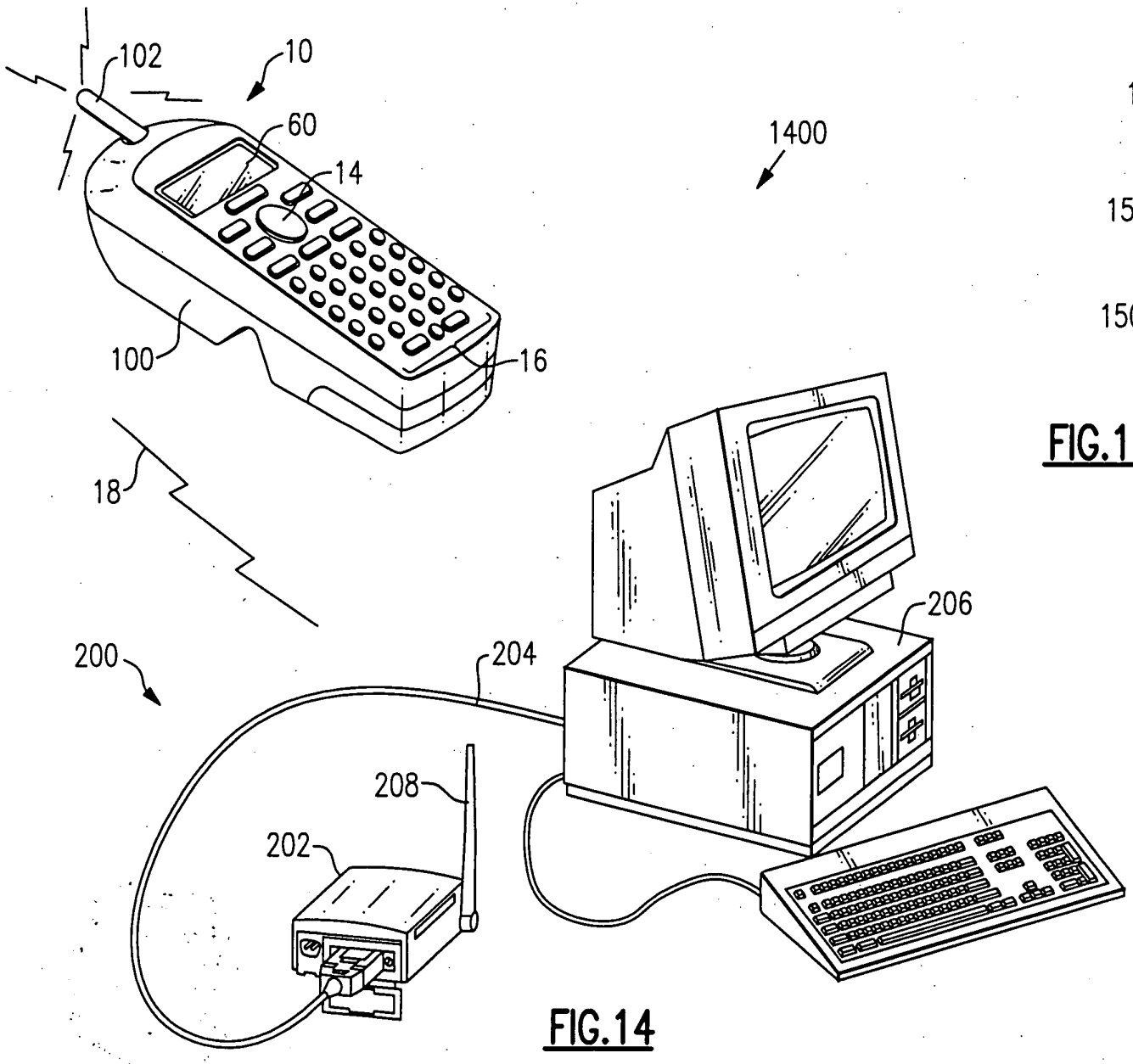

FIG.14

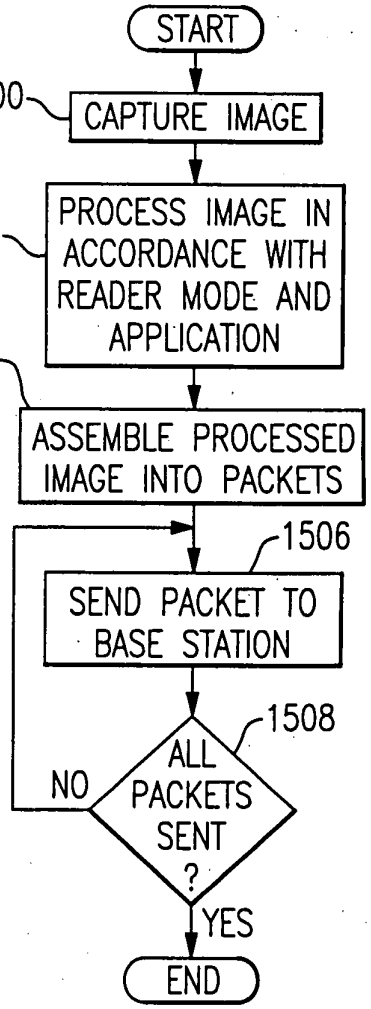

FIG.15

T0500T 269h0660

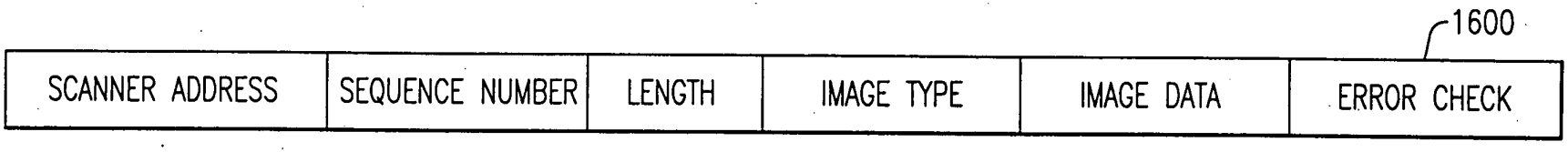

FIG.16A

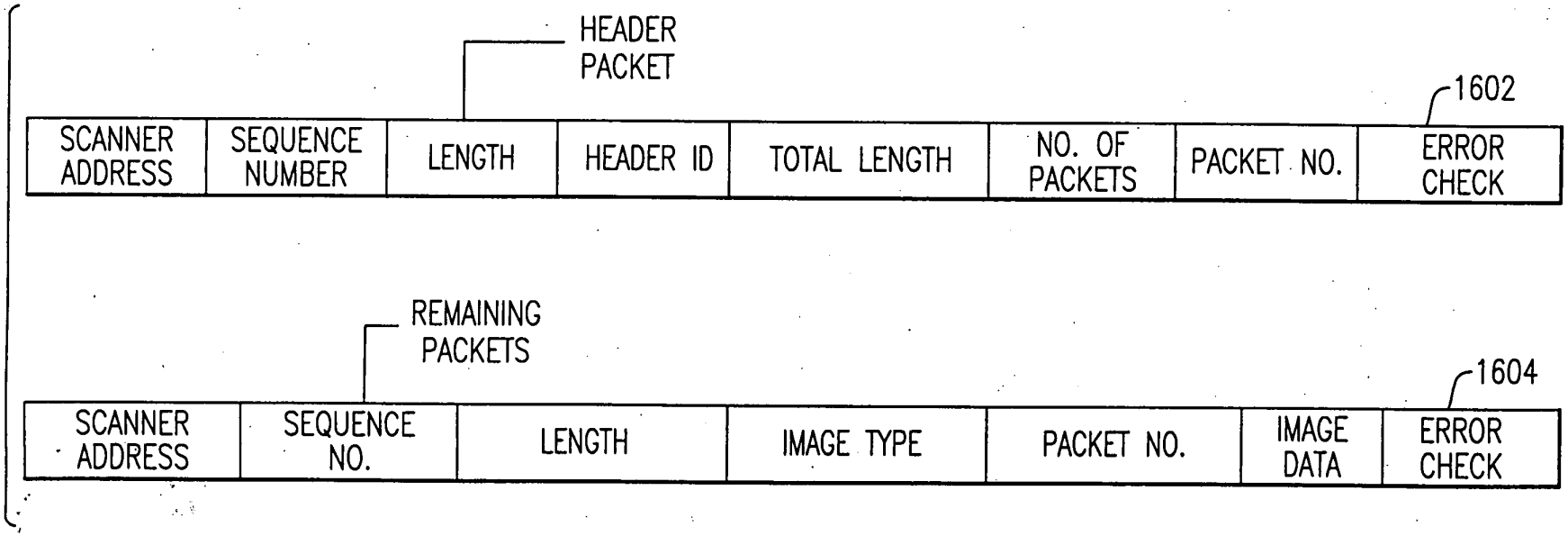

FIG.16B

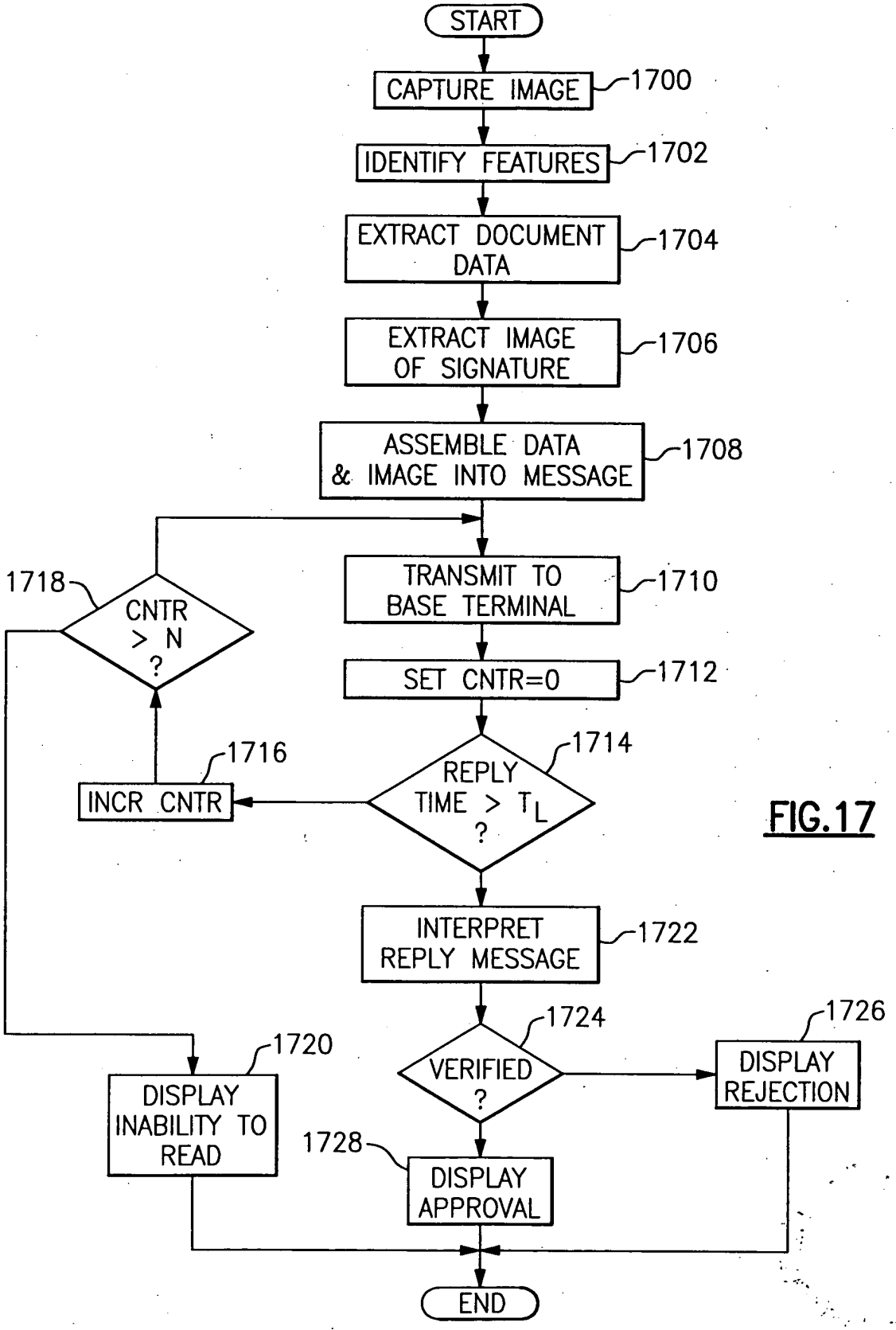
START
CAPTURE IMAGE
1700
IDENTIFY FEATURES
1702
EXTRACT DOCUMENT DATA
1704
EXTRACT IMAGE OF SIGNATURE
1706
ASSEMBLE DATA & IMAGE INTO MESSAGE
1708
TRANSMIT TO BASE TERMINAL
1710
SET CNTR=0
1712
REPLY TIME > T_L ?
1714
INCR CNTR
1716
CNTR > N ?
1718
INTERPRET REPLY MESSAGE
1722
VERIFIED ?
1724
DISPLAY INABILITY TO READ
1720
DISPLAY REJECTION
1726
DISPLAY APPROVAL
1728
END

FIG.17

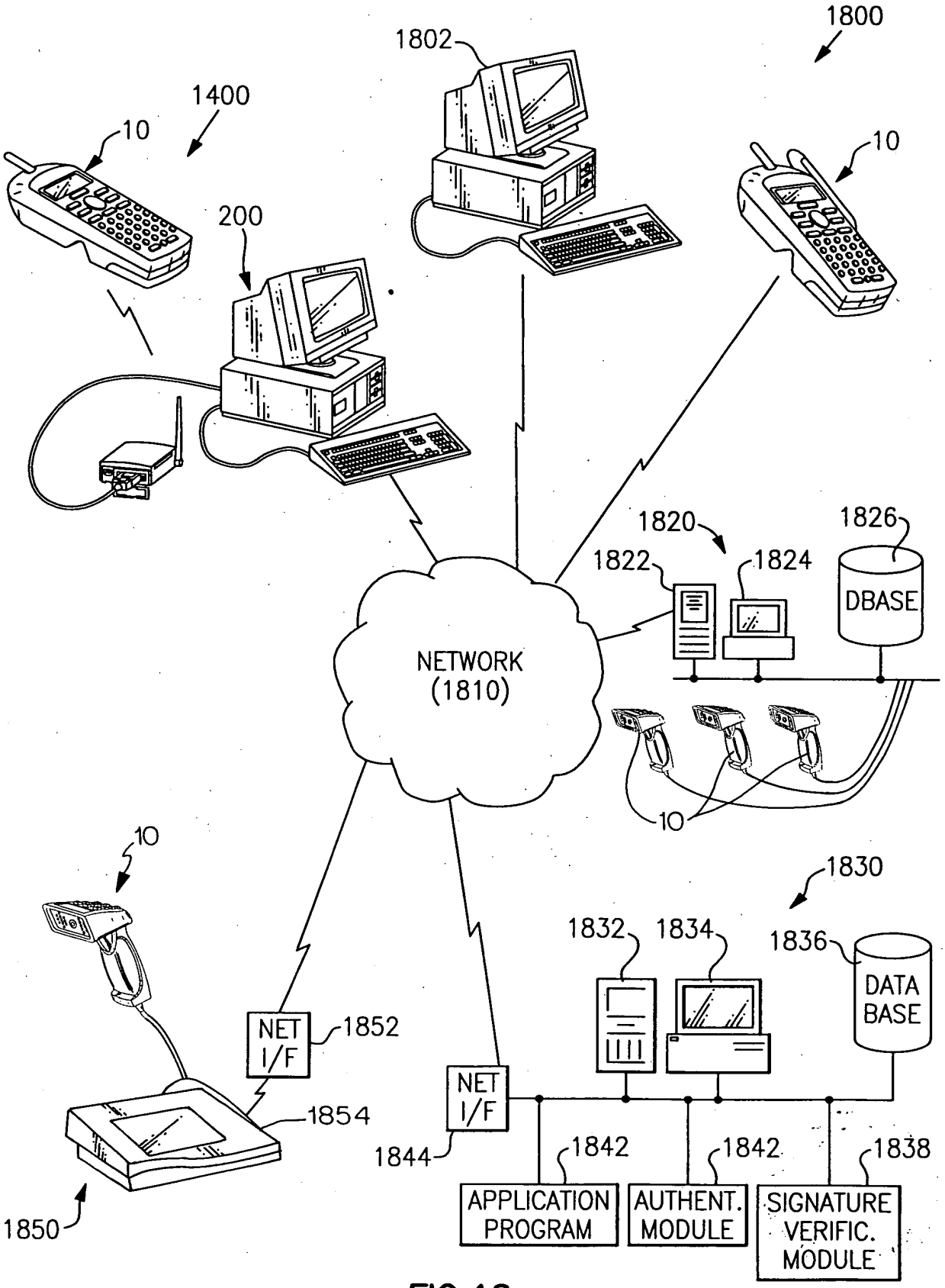
1800
1802
1400
10
200
10
1820
1826
1822
1824
DBASE
NETWORK
(1810)
10
10
1830
1832
1834
1836
DATA
BASE
NET
I/F
1852
NET
I/F
1854
1844
1842
1842
1838
APPLICATION
PROGRAM
AUTHENT.
MODULE
SIGNATURE
VERIFIC.
MODULE
1850

FIG.18